

PATE COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
United States Patent and Trademark
Office, PCT
2011 South Clark Place Room
CP2/5C24
Arlington, VA 22202
ETATS-UNIS D'AMERIQUE
in its capacity as elected Office

Date of mailing (day/month/year) 01 November 2000 (01.11.00)	
International application No. PCT/GB00/01253	Applicant's or agent's file reference R037279PPC
International filing date (day/month/year) 03 April 2000 (03.04.00)	Priority date (day/month/year) 01 April 1999 (01.04.99)
Applicant DECAUX, Daniel, Henri et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
13 September 2000 (13.09.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

Pople, Joanne S.
MARKS & CLERK
Alpha Tower
Suffolk Street Queensway
Birmingham B1 1TT
GRANDE BRETAGNE

PTO/PCT Rec'd 27 SEP 2001

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NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing (day/month/year)	16.07.2001
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Applicant's or agent's file reference R037279PPC	IMPORTANT NOTIFICATION
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International application No. PCT/GB00/01253	International filing date (day/month/year) 03/04/2000	Priority date (day/month/year) 01/04/1999
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Applicant DELPHI TECHNOLOGIES INC. et al.
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1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

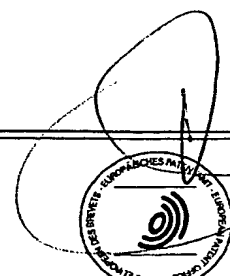
Name and mailing address of the IPEA/	Authorized officer
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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference R037279PPC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/01253	International filing date (<i>day/month/year</i>) 03/04/2000	Priority date (<i>day/month/year</i>) 01/04/1999
International Patent Classification (IPC) or national classification and IPC B01D27/06		
Applicant DELPHI TECHNOLOGIES INC. et al.		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention.
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13/09/2000	Date of completion of this report 16.07.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Plaka, T Telephone No. +31 70 340 2325 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/0129

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1,3-9	as originally filed			
2,2a	as received on	03/04/2001	with letter of	02/04/2001

Claims, No.:

1-12	as received on	03/04/2001	with letter of	02/04/2001
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Drawings, sheets:

1/2,2/2	as originally filed
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2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/0125

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	6-12
	No:	Claims	1-4
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-12
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents, which were not cited in the search report:

D3: FR 1477891 A

D4: US 5290445 A

D5: US 4683055 A

Document D3 discloses (cf. the whole document) a fuel filter comprising a filter body defining an internal chamber within which a filter medium (Fig. , (12)) is located, the filter medium including a first member having a first end secured to a support plate (Fig., (11)) and a second end bonded directly to the filter body, the filter body being of multi-part construction, the parts (Fig. , (5), (1)) of the filter body being non-removably, sealingly secured to one another, the filter body being shaped to define an inlet port (Fig. , (4)) and an outlet port (Fig. , (8)) communicating with the dirty and the clean sides of the filter medium respectively. The filter medium is a pleated paper filter member.

Therefore, the fuel filter of document D3 anticipates the subject-matter of claim 1 and its dependent claims 3 and 4 (Art. 33(2) PCT).

Also document D5 discloses a filter which anticipates the subject-matter of independent claim 1 and its dependent claims 2 and 4.

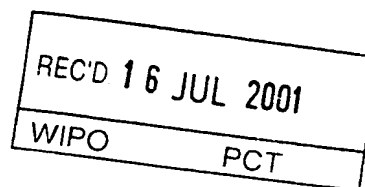
The additional technical features of dependent claims 5 to 10 have already been employed for the same purpose in the filtering device of document D5, column 5, line 54 - column 6, line 49, figures. The subject-matter of said claims does not therefore involve an inventive step (Art. 33(3) PCT).

The subject-matter of dependent claims 11 and 12 appears to be conventional.

Re Item VII

Certain defects in the international application

Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D3 to D5 are not mentioned in the description, nor are these documents identified therein.



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

14

Applicant's or agent's file reference R037279PPC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/01253	International filing date (day/month/year) 03/04/2000	Priority date (day/month/year) 01/04/1999
International Patent Classification (IPC) or national classification and IPC B01D27/06		
Applicant DELPHI TECHNOLOGIES INC. et al.		

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- II ☐ Priority
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Date of submission of the demand 13/09/2000	Date of completion of this report 16.07.2001
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized officer Plaka, T Telephone No. +31 70 340 2325

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/01253

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

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Drawings, sheets:

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- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
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4. The amendments have resulted in the cancellation of:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/01253

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

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Novelty (N)	Yes:	Claims	6-12
	No:	Claims	1-4
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-12
Industrial applicability (IA)	Yes:	Claims	1-12
	No:	Claims	

2. Citations and explanations
see separate sheet

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Therefore, the fuel filter of document D3 anticipates the subject-matter of claim 1 and its dependent claims 3 and 4 (Art. 33(2) PCT).

Also document D5 discloses a filter which anticipates the subject-matter of independent claim 1 and its dependent claims 2 and 4.

The additional technical features of dependent claims 5 to 10 have already been employed for the same purpose in the filtering device of document D5, column 5, line 54 - column 6, line 49, figures. The subject-matter of said claims does not therefore involve an inventive step (Art. 33(3) PCT).

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Re Item VII

Certain defects in the international application

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The provision of an arrangement for securing the filter head and bowl to one another and locating a seal arrangement therebetween results in the filter being of relatively complex form.

Non serviceable filters in which the filter bowl and filter head are non-separable are known. GB 2121696A discloses an oil filter, particularly for use with internal combustion engines, comprising a casing and an end cap made of thermoplastic material and welded together. These form a housing in which the filter element, and other components are contained.

GB 2333245A discloses a filter head having a variable flow path and comprising a lower chamber, arranged to communicate with a central part of an associated filter, an upper chamber and a plurality of ports. The filter head may also comprise a temperature sensitive valve which controls the flow of fuel from the high pressure fuel pump back to the filter head.

According to the present invention there is provided a fuel filter comprising a filter body defining an internal chamber within which a filter medium is located, the filter body being of multi-part construction, the parts of the filter body being non-removably, sealingly secured to one another, the filter body being shaped to define an inlet port and an outlet port communicating with dirty and clean sides of the filter medium, respectively.

The filter body is preferably a plastics moulded filter body.

2a

As the parts of the filter body are not intended to be separable, replacement of the filter medium during servicing requires replacement of the whole filter. As the filters are pre-assembled, no action needs to be taken during servicing to ensure that fuel leakage from the filter is to be avoided, servicing simply requiring the fuel lines connected to the ports to be removed, the filter replaced with a new filter, and the fuel lines connected to the new filter. The old filter can be discarded.

The parts of the filter body are conveniently secured to one another using a friction welding technique.

Conveniently the filter medium comprises a pleated paper filter member, a first end of which is bonded to a support plate located within the filter body, a second end of the filter member being bonded to the filter body.

CLAIMS

1. A fuel filter comprising a filter body (10) defining an internal chamber (15) within which a filter medium (16) is to be located, the filter medium including a filter member having a first end secured to a support plate (17) and a second end secured to the filter body (10), the filter body (10) being of multi-part construction, the parts (10a, 10b) of the filter body (10) being non-removably, sealingly secured to one another, the filter body (10) being shaped to define an inlet port (11) and an outlet port (13) communicating with dirty and clean sides of the filter medium, respectively.
2. The filter as claimed in Claim 1, wherein the parts (10a, 10b) of the filter body (10) are secured to one another by means of a friction welding technique.
3. The filter as claimed in Claim 1 or 2, wherein the filter medium (16) is a pleated paper filter member.
4. The filter as claimed in Claim 1 to 3, wherein the second end of the filter member is bonded directly to the filter body (10).
5. The filter as claimed in any of Claims 1 to 4, wherein the filter body (10) further defines a second inlet port (12) and a return port (14).
6. The filter as claimed in Claim 5, further comprising a temperature sensitive valve (22) operable to control whether fuel entering the filter body (10) through the second inlet port (12) is supplied to the dirty side of the filter medium (16) or supplied to the return port (14) for return to a fuel reservoir.

7. The filter as claimed in Claim 6, wherein the temperature sensitive valve comprises a ball valve.

8. The filter as claimed in Claim 7, wherein the ball valve comprises a valve member (22) which is moveable under the influence of a bimetallic element (21).

9. The filter as claimed in any one of Claims 6 to 8, further comprising a non-return valve member (24) resiliently biased into engagement with a seating (26) to ensure that fuel is able to flow from the second inlet port (12) to the return port (14), but to substantially prevent fuel and/or gas vapour flow in the reverse direction.

10. The filter as claimed in Claim 9, wherein the non-return valve member (24) comprises a plate formed from rubber or a rubber-like material.

11. The filter as claimed in any of Claims 1 to 8, further comprising a downwardly depending tubular member (18) which is secured to the filter body (10), the tubular member (18) serving to force fuel flow in a downward direction prior to entering the tubular member (18), in use.

12. The filter as claimed in Claim 11, wherein the tubular member (18) is provided with one or more openings (19) through which air is able to flow at a relatively low rate.